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ABSTRACT

This report: (1) describes the organization of an invitational conference aimed at gathering direction from classroom teachers regarding instructional applications of computers; (2) provides copies of all materials used in organizing such a conference; and (3) reports the results of the conference in terms of conference products (resolutions, survey instruments, etc.). Thirty-nine resolutions are included. The first is a detailed position statement regarding instructional use of computers. Recommendations 2-39 direct specific persons, agencies, or organizations to take specific actions supportive of this position. (Author/MK)

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ED 186252

CONFERENCE REPORT:

WYOMING INVITATIONAL CONFERENCE ON INSTRUCTIONAL APPLICATIONS OF COMPUTERS

Casper, Wyoming

1979-09-28

U S DEPARTMENT OF HEALTH
EDUCATION & WELFARE
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SE 030 651

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The Wyoming Invitational Conference on Instructional Applications of Computers and this report were made possible by contributions of services and monies from several sources.

Dr. J. Richard Dennis of the University of Illinois (Urbana-Champaign) contributed three days of his time in traveling to and addressing the conference. Requesting no honorarium while sharing generously of his expertise in instructional computing, he even paid his own plane fare!

The Wyoming Mathematics and Science Teachers Association secured the required meeting space and luncheon facilities at Kelly Walsh High School. It also voluntarily paid the per diem expenses of Dr. Dennis.

The conference was planned, executed and otherwise funded by the Science and Mathematics Teaching Center (SMTC) of the University of Wyoming. Several follow-up activities, including the preparation of this report, also were carried out by SMTC faculty.

Of the 61 conference participants, 54 were public school personnel. Each made the personal professional and financial arrangements required to attend the conference and then worked diligently to generate the conference products reproduced in this report.

Printing and distribution of this report have been made possible by a grant from the Center for Research Services and Publications of the University of Wyoming.

The contributions of each of these persons and organizations is gratefully acknowledged.

FOREWORD

This report has been prepared in the hope of serving the reader in three ways.

1. By describing the organization of an invitational conference aimed at gathering direction from classroom teachers regarding instructional applications of computers.
2. By providing copies of all materials used in organizing such a conference.
3. By reporting the results of such a conference in terms of conference products (resolutions, survey instruments, etc.)

It follows that permission to modify and/or reproduce any of the materials found in the appendices of this report is freely given.

Bob Kansky
Laramie, Wyoming
1979-11-30

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INTRODUCTION

To fully appreciate the purposes and procedures which resulted in the Wyoming Invitational Conference on Instructional Applications of Computers, it is necessary to understand the unique role played by the Science and Mathematics Teaching Center of the University of Wyoming. In light of this understanding, the reader may better judge how to make use of the information and materials contained in this report.

The University of Wyoming is the only four-year institution of higher education in Wyoming. It is solely responsible for serving the educational needs of a state which ranks eighth in land area and forty-ninth in population. In particular, it must respond to requests for assistance from the State's 74 public secondary schools (44 of which had 1978 graduating class enrollments of 50 or fewer students) and 253 public elementary schools (83 of which had total enrollments of under 50 students in 1977-78).

In 1970, the University of Wyoming created the Science and Mathematics Teaching Center (SMTC). A joint enterprise of the College of Education and the College of Arts and Sciences, the SMTC was given the specific charge to "deliver the resources of the University to the public schools" in matters pertaining to the identification, selection, modification and implementation of curricular innovations in science or mathematics for Grades K-12. The method for fulfilling this charge was left open to SMTC design.

Since its inception, the SMTC has sought the direction of Wyoming's public school personnel in defining local educational needs, exploring possible solutions and implementing changes. Thus, SMTC programs have developed in anticipation of the needs of public education as identified through research and through close association with lead teachers throughout the State. As a result, the SMTC can and

does call upon statewide samples of such lead teachers on a school-by-school basis whenever university/school cooperative efforts are needed to conduct school-based research, to provide guidance regarding proposed SMTC activities or to conduct local inservice awareness programs. This cadre of teachers, participating in these efforts on their own time and without remuneration, are a unique resource in statewide planning and implementation programs. By their participation, they lend initial credence to the programs and greatly enhance their acceptance. The conference reported here is one example of the cooperative efforts of the SMTC and these teacher leaders.

PURPOSE AND ASSUMPTIONS

The purpose of the conference was to engage leading classroom teachers from across Wyoming in directing statewide policy and procedures regarding instructional uses of computers.[1] Specifically, conference organizers sought the help of these leaders in defining broad policy, in delineating the inservice needs of specific subgroups of teachers, in specifying the breadth and purpose of a statewide needs assessment or status survey in the area of computer use, in exploring the need for and/or functions of a communications network specific to instructional uses of computers and in drafting a documentation form and set of procedures aimed at facilitating initial efforts in software exchange. It was intended that the conference be a working conference which would develop resolutions regarding these issues which would be addressed to such persons, agencies or organizations as conferees felt should be called upon to develop appropriate responses. Finally, the conference organizers were to facilitate communication of conference resolutions to those addressed and to keep conferees informed of developments until such time as a responsible communications network might be established.

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[1] For the purpose of both the conference and this report, a computer is defined to be "a machine which operates under the control of a stored program." The term is used to refer not only to the central processing unit but also to auxiliary storage, communication links and all peripheral equipment. While the term does not exclude programmable calculators from consideration, conference attention did focus upon large time-sharing systems (e.g., the Xerox Sigma 7), time-sharing minicomputers (e.g., the PDP-8) and microcomputers (e.g., the North Star Horizon, Commodore Pet, Radio Shack TRS-80 and the Apple II).

In organizing this conference, the Science and Mathematics Teaching Center (SMTC) was guided by four assumptions:

1. The opinions and expressed needs of classroom teachers are prerequisite to the development of organized efforts to develop and facilitate instructional uses of computers.
2. Most instructional applications of computers do not require programming knowledge on the part of the user.
3. Significant instructional applications of computers are to be found in every area of the school program (academic and extracurricular) and at every grade level (K-12).
4. There is immediate need for statewide attention to a coordinated effort to develop the instructional potential of the computer.

These assumptions, in turn, resulted in four fundamental decisions regarding the operation of the conference:

1. Conference participants must be selected to ensure the representation of all grade levels, several areas of the school program and a broad range of understanding regarding computers and their uses.
2. The conference must provide a broad, nontechnical overview of instructional applications of computers by someone who is both actively engaged in the development of those applications and understanding of the concerns of classroom teachers.
3. The conference must be structured in order to be productive.
4. Conference participants (public school personnel) must author or revise[2] all conference resolutions; only these participants would cast votes to approve or reject any resolution.

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[2] It was anticipated that, in keeping with the decision to provide structuring, a few items would be submitted for consideration (review, modification or rejection) by the participants.

CONFERENCE ORGANIZATION

Initial Planning

The purposes and organizational procedures for a statewide invitational conference on instructional applications of computers was first addressed by SMTC faculty in 1979-06. Although no special funding for such a conference could be anticipated due to the time line proposed, it was agreed that the costs of postage, telephone, printing and secretarial services would be paid out of the SMTC operating budget. One faculty member (who was not employed for the summer) agreed to donate two weeks of the summer to planning the conference, selecting participants, preparing letters, etc. Conference participation would be on a pay-your-own-way basis.

The selection of Friday, 1979-09-28 was the result of some planning and some good fortune. A date soon after the opening of school was desired in order to allow most of the academic year for analyzing, distributing and (hopefully) acting upon conference resolutions. Due to the physical size of Wyoming, a central location for the meeting was desired. Finally, there was a need for a large, flexible meeting area at no charge.

Upon consulting the three presidents of National Council of Teachers of Mathematics affiliates in Wyoming, it was discovered that one affiliate, the Wyoming Mathematics and Science Teachers Association (WMSTA), planned to hold its annual meeting in Casper (as central a location as can be found in Wyoming) on Saturday, 1979-09-29. Use of spacious facilities at Kelly Walsh High School could be obtained for Friday; WMSTA agreed to pay per diem expenses for a major conference speaker who would agree to speak also at the WMSTA meeting on Saturday.

A speaker (Dr. Dick Dennis of the University of Illinois) was recommended by

the SMTC and endorsed by the WMSTA. Upon contact, Dick agreed to the two-day commitment and to pay his own travel expenses out of grant funds.

Wyoming's State Department of Education Mathematics Consultant was in regular contact with SMTC faculty throughout this planning stage. He, in turn, kept the State Superintendent informed with regard to conference purposes and planning. The Superintendent, who expressed considerable interest in the project, asked the mathematics consultant to attend the conference as the Department's representative.

Participant Selection

In 1979-07, SMTC faculty met to prepare a list of potential conference participants. The list of 93 persons included:

* at least one representative from each of Wyoming's 50 school districts,
* teachers from all possible precollege levels (primary, intermediate, middle school, junior high school and high school),
* teachers from rural and urban schools,
* secondary school teachers from several curricular areas (business, counseling, English, mathematics, natural science, physical education, social science, special education and vocational education),
* teachers representing a broad spectrum of contact with computers (from those who were actively engaged in instructional uses of computers through those who had not yet given any consideration to involvement with such activity), and
* a few administrators and administrator/teachers having a strong interest in curricular innovations.

On 1979-08-20 (coinciding with the opening of most schools), an individually typed invitation (Appendix A) was sent to each potential participant.[3] The invitation was accompanied by a preliminary agenda (Appendix B) and a stamped, pre-addressed response card.

Of the 93 persons invited, 54 accepted. (Of those declining, 21 expressed regret owing to other commitments and asked to be informed of conference results.[4]) Those accepting represented 39 schools from 22 Wyoming districts. They included teachers from every level (K-12), teachers from seven secondary school subject matter areas (business, counseling, English, mathematics, natural science, social science, special education) and four administrators.

A follow-up letter (Appendix C), revised agenda (Appendix D) and description of conference work groups was mailed beginning 1979-09-05.

Conference Structuring

Although the morning lecture/demonstration/discussion session by Dick Dennis was of primary importance in providing participants with a broad, current perspective on instructional applications of computers, the conference was intended to be a working conference. It was to produce specific statements which would be useful in guiding immediate and long-term planning. Therefore, conference planners decided to define several work groups and to assign each conference participant to one such group.

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[3] Note the offer to accept a collect, person-to-person call for further information. This offer was accepted by only eight persons, but it is viewed as having contributed to the attendance of each of those eight.

[4] This is being done. In fact, the list of persons requesting conference "mailing status" now stands at 133.

With the help of 15 classroom teachers attending an SMTC summer workshop on instructional applications of computers and two of the three NCTM affiliate presidents, nine work groups (Work Groups 1-8B of Appendix E) were defined and revised.[5] In each case, the work group description was written with an eye to presenting a specific task without defining the group product.

Prior to the conference, ten participants were contacted by phone and asked to serve as chairpersons of specific work groups. Each agreed. The telephone conversation included a discussion of the task of the work group and the two-fold task of the chairperson: to keep the group on task and to ensure the writing of resolutions specific to the group's task. Chairpersons of Work Groups 1, 2 and 9 were provided with multiple copies of the draft documents to be considered by their groups.

Conference Activities

Conference activities included all revised agenda (Appendix D) items except the final voting called for in Item IV of the afternoon session.

A total of 39 resolutions were prepared by the work groups in the small group sessions. Each was discussed by the total group of participants; specific suggestions for revision were made. During a second round of small group sessions, the resolutions were modified, written on ditto masters and reproduced[6] in sufficient quantity to provide a copy for each participant. It was then agreed that the SMTC faculty should take responsibility for having the resolutions typed in a common

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[5] Work Group 9 was added later as a result of the request contained in the follow-up letter (Appendix C). At that time, Work Group 9 was a blank space.

[6] SMTC faculty performed this and other critical tasks (e.g., making coffee/tea, getting doughnuts, supplying paper, setting up equipment, moving furniture, locating restrooms).

format. Minor changes in punctuation (to allow the common format) were to be permitted, but there were to be no substantive changes in text.[7] This typed copy (Appendix F),[8] a ballot (Appendix G) and a cover letter (Appendix H) were then to be mailed to each conference participant. The ballots were to be returned to the SMTC for tallying and summative reporting.

Conference work was completed by 4:30 p.m. as planned. The evening computer demonstration (see Appendix D) was moved to a private home of convenient location with refreshments provided by the WMSTA. Well attended, it provided a relaxed forum in which to continue the discussions of the day.[9]

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[7] The copies distributed at the conference were viewed as adequate insurance against such alterations.

[8] The copy of this appendix has been corrected to remove obvious omissions and typographical errors noted by participants when the ballots were returned.

[9] An afterthought: membership in the 10 work groups was worked out while Dr. Dennis was making his presentation. Registration forms were used to identify the current teaching assignment of each participant; groups were constructed with attention to providing diversity of membership. A group membership list was then reproduced using the spirit duplicating machine brought by the SMTC. (No Kelly Walsh High School reproduction equipment was used. This was done to avoid bothering the school faculty. Bringing our own equipment also assured immediate access.)

Balloting Procedure

The resolutions were rewritten and typed as requested by conference participants. During this process, three chairpersons were contacted by phone in order to clarify the intent of specific resolutions and to approve revisions in wording. Copies of the resolutions were mailed to all 61 persons who attended the conference; ballots and return envelopes also were provided for the 54 public school personnel who were eligible to vote. Phone calls were placed to each person who had not returned a ballot by 1979-10-25; balloting was judged complete on 1979-11-19. Completed ballots were received from 51 of the 54 participants.

List of Conference Products

The conference generated five written products.

1. A resolution which is a position statement regarding instructional applications of computers. (Resolution 1 of Appendix F.)
2. Thirty-eight resolutions recommending specific actions by specific groups with regard to the position statement. (Resolutions 2-39 of Appendix F.)
3. A voting record (with comments) on each of the 39 resolutions noted above (Appendix I).
4. The draft of a documentation form to be employed by all computer users in describing software during initial efforts in software exchange (Appendix J).
5. A draft of instruments with which to conduct a survey of computing activities in Wyoming's schools (Appendix K), including a draft of a proposed cover letter (Appendix L).

Products 1, 4 and 5 are based upon materials prepared by the SMTC faculty

and submitted to conference participants for revision and recommendation regarding use. There are resolutions in Product 2 which speak to the use of these materials. The comments in Product 4 allowed participants to "qualify" their votes and make useful observations in the absence of the usual debate and amendment procedures.

COMMENTS REGARDING CONFERENCE PRODUCTS

The voting record/comment in Appendix I reveals strong support for all resolutions and documents considered by the conference participants. While the comments express few objections or reservations, they do bring some issues to light; a few provide thoughtful suggestions. These comments are included in this report in order to provide possible amplification of ideas in the resolutions. It is here recommended that the reader, in considering any resolution of Appendix F, examine the corresponding comments in Appendix I.

Overview

Of the 39 resolutions, 11 received unanimous approval and another 25 were approved by from 90 to 98 percent of the participants. One resolution was supported by 88 percent of the voters; two resolutions drew the lowest rate of endorsement, 84 percent. Generally speaking, conference proposals were firmly endorsed.

The State Department of Education (SDE) and Science and Mathematics Teaching Center (SMTC) are addressed in several resolutions. This is natural inasmuch as both are charged with the development of needed preservice and inservice education programs. Participants recognized this even in expressing (Appendix I) some doubts as to whether either organization was up to the tasks presented.

Probably due to the decision to structure the conference through the use of a keynote speaker and ten defined work groups, there is little redundancy among the 39 resolutions. It is worth noting the three exceptions.

Resolutions 2 and 10 both deal with software exchange. Resolution 2 is a detailed resolution (owing to the charge given the work group that produced it) whereas Resolution 10 is a general statement written by a group that simply wished to "reinforce" the request for an exchange facility. There is an apparent conflict

regarding who should run the exchange (SMTC or SDE), but this is not an important point. The issue is that an exchange should be established with the help of some group having the wherewithal to operate it.

Resolutions 8, 12 and 14 all call for inservice programs (awareness level) in instructional uses of computers. They differ only with regard to who should take responsibility for conducting such programs and in what mechanism(s) should be employed--SDE (noncredit) workshops, summer courses, correspondence courses or SMTC portal school workshops.[10]

Resolutions 8, 15 and 29 all address the need to seek funding of a site (a public school) which would experiment with a wide variety of instructional applications of computers in a variety of academic and extracurricular areas. The discriptors "model" and "demonstration" were, perhaps, unfortunate choices in these resolutions. To some participants, they suggested the establishment of a paradigm to which all schools would be asked to conform. The notion of "one right way" was, quite justifiably, rejected.[11]

The remaining four sections of this report will comment briefly on specific conference products. There will be no grand summary or analysis. The advisory nature of the conference demands that the products speak for themselves.

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[10] The term "portal school" refers to a unique inservice delivery system developed by the SMTC under a grant from NSF. Not only has the system survived the termination of NSF funding in 1975, it has continued to expand and modify to meet regional needs.

[11] The participants discussed this at length in a total-group meeting. Those supporting the resolution argued that their interest was in an "experimental" site -- one which would explore and report ideas. It was felt that all schools would benefit from such experimentation. Also, it was understood that no school would be bound or bounded by those experiments.

Position Statement

Resolution 1 (Appendix F) is a detailed position statement regarding instructional uses of computers. No participant voted to reject it. It asserts the principles that such applications should be multidisciplinary and of many forms in order "to take maximum advantage of the many kinds of applications of computers to education." In addition to listing specific examples of these "kinds of applications," it affirms the need for all school personnel to be involved in the selection and development of such applications.

Action Statements

Resolutions 2-39 direct specific persons, agencies or organizations to take specific actions supportive of the position taken in Resolution 1. Suggested actions include the execution of a statewide survey of computing activity (Resolutions 35-39), establishment of a facility and procedures for assisting in software exchange (Resolutions 2, 10 and 31), development of teacher inservice programs (Resolutions 8, 12, 13, 14, 23, 24, 28, 30 and 32), funding of a program permitting extensive experimentation with use of a variety of instructional applications within a public school (Resolutions 8, 15 and 29) and continuing communication of information about computers and their uses in education (Resolutions 3, 4, 5, 11, 16-21, 25 and 34). Throughout these resolutions there are frequent explicit and implicit calls for interdisciplinary and interagency cooperative efforts.

Software Documentation Form

Appendix J is the draft of a simple documentation form felt to be of value in initial efforts at software exchange. While providing basic information about a given program and its intended use, it neither attempts the detail of program

remarks nor addresses the issues generated by the specific computer system on which it was developed. Software compiled at this level of documentation constitutes a kind of software jungle into which the user ventures at his own risk but with an indication of the possible treasures to be found.

Computer Usage Survey Instruments

The questionnaires in Appendix K are drafts of instruments to be used in the status and opinion survey called for in Resolution 35; Appendix L is a draft of a possible cover letter as indicated in Resolution 37. The request for State Department of Education endorsement of this survey (Resolutions 36 and 37) was deemed necessary on two counts: (a) to insure a high return rate and (b) to initiate Department involvement with computer education efforts requested by the conference.

AFTERWORD

In the Foreword to this paper, three purposes for reporting the conference are listed. The description of the organization of conference and of its results (Purposes 1 and 3) are presented in Pages 1-16 and are amplified by the conference products found in Appendices F, I, J, K and L. The remaining Appendices are included (Purpose 2) to aid the reader who might be interested in organizing a similar conference.

At the time of this writing, several actions have been taken in response to the conference resolutions (Appendix F). Conference participants automatically will be kept informed of these developments through bulletins issued by the Science and Mathematics Teaching Center. Other persons wishing to receive those bulletins should contact the author of this report in order to be placed on a mailing list.

APPENDIX A

SCIENCE AND MATHEMATICS
TEACHING CENTER

ADDRESS REPLY TO WRITER

THE UNIVERSITY OF WYOMING
UNIVERSITY STATION, BOX 3992
LARAMIE, WYOMING, 82071

August 20, 1979

Dear

It is my pleasure to invite you to attend the Wyoming Conference on Educational Applications of Computers to be held at Kelly Walsh Senior High School in Casper on Friday, 28 September. This one-day working conference will examine the range of applications, develop a position statement regarding the place of computers in Wyoming's schools and generate specific recommendations for action by the State Department of Public Instruction, the professional educational groups in Wyoming and the University of Wyoming.

This is an invitational conference. The persons invited (about 30) have in common a reputation as educational leaders. They differ widely in grade level assignment (K-12), subject matter interest and familiarity with computers and their uses. Both the commonality and the differences were recognized in compiling the list of invited participants; both are critical to the issues to be addressed.

The conference is not to be an exercise in casual conversation. It's purpose is to recommend statewide policy and to define specific actions. It is anticipated that some recommendations will receive immediate implementation; others will set constraints on programs and funding to be pursued in the near future; others will be the basis of long-range planning.

A brief description of conference activities is enclosed. A more detailed agenda and supplementary information will be sent to persons agreeing to participate.

As important as this conference is, we have no funds to support it. Each of us, including Dr. Dennis, will be paying his own way. However, I hope that you will agree that the end is worth the means and will agree to participate. Please complete the enclosed card and return it by 5 September in order that I may carry out the follow-up planning required. If you have a question, call me collect and person-to-person at 766-6381.

Cordially,

Bob

Bob Kansky

BK:baa

Enclosures: Response card
Draft agenda

NOTE: The Wyoming Mathematics and Science Teachers Association will hold its annual meeting at Kelly Walsh on Saturday, 29 September. This will be an excellent opportunity to gather new ideas about the teaching of math and science in Grades K-12. Why not plan to stay over?

APPENDIX B

WYOMING CONFERENCE ON EDUCATIONAL
APPLICATIONS OF COMPUTERS

Kelly Walsh High School *
Casper, Wyoming
28 September 1979

Morning (8:30 - 12:00)

1. Informational overview and demonstration of educational applications of computers by Dr. Dick Dennis of the University of Illinois. (Dick is nationally known as a teacher and writer in this field. He's also simply a very nice person to know.)
2. Description of several action items for computer education in Wyoming.
3. Identification of working subgroup for each action item.

Afternoon (1:00 - 4:30)

1. Subgroups meet to discuss action items.
2. Subgroup preliminary report to entire group.
3. Subgroup writing of specific motions on action items.
4. Conference discussion of and voting upon subgroup motions.

Evening (voluntary)

For those who wish to work with some of the demonstration programs displayed by Dick, computers will be available in the rooms of conference organizers staying at the I-25 Inn. More about this later.

REMEMBER: The annual meeting of the Wyoming Mathematics and Science Teachers Association (WMSTA) will be held at Kelly Walsh on Saturday. Dick will be there. (One of his presentations will be on how-to-pick-a-friendly-computer.) Hope you'll stay for that meeting. For further information on the WMSTA meeting, contact Rita Livingston, 1301 Manor Drive, Casper, WY 82601.

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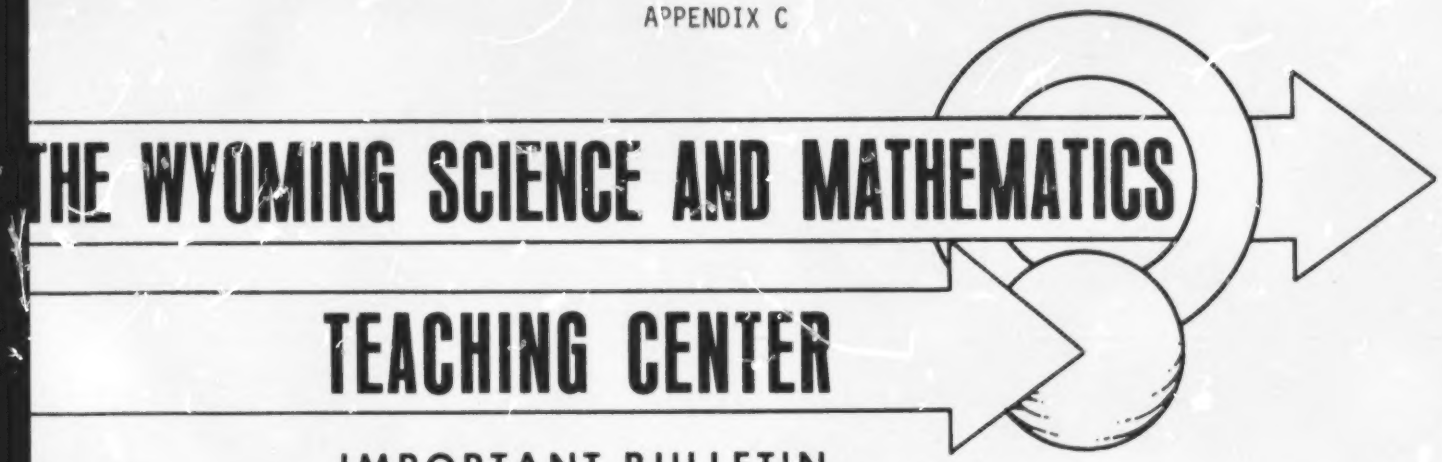
* The conference will be held in Room 240. Please check in at the Principal's Office; a guide will take you to the room.

APPENDIX C



IMPORTANT BULLETIN

Dear Conference Participant:

We're indeed glad that you'll be able to work with us at the Wyoming Conference on Educational Applications of Computers to be held at Kelly Walsh Senior High School in Casper on Friday, 28 September. Due to an excellent response rate from those invited, the group will have the desired breadth of representation across grade levels (K-12) and subject matter areas (business, English, mathematics, science, social studies, etc.).

Any policy statements and action items produced by this conference will be solely the responsibility and expression of the precollege public school personnel who have been invited. Only those persons will be eligible to vote on any issue. Representatives of the State Department of Education and of the Science and Mathematics Teaching Center will be present to answer questions, run the ditto machine and make the coffee. Guests from the University of Nebraska will participate in order to gather information that might be useful in working with Nebraska teachers and, possibly, in establishing cooperative work with Wyoming.

A revised agenda is enclosed. (Please discard the (yellow) one sent earlier.) Attached to it is a description of the several working groups that will generate the Conference products. If you have a strong wish to serve on some particular Work Group or if you wish to contribute the description of Work Group 9 (see enclosure), please write or phone (766-6381) me no later than 17 September.

Cordially,

Bob

Bob Kansky

BK:baa

P.S. Please excuse the mimeographed, impersonal format of this note. Time is short and work is long....

Enclosures: Agenda (pink)
Descriptions of Work Groups (buff)

APPENDIX D

REVISED AGENDA

WYOMING CONFERENCE ON EDUCATIONAL
APPLICATIONS OF COMPUTERS

Kelly Walsh High School*
Casper, Wyoming
28 September 1979

7:30 - 8:30	Coffee, donuts, registration and time to chat with friends
8:30 - 10:30	"Educational Applications of Computers in the Total School Environment" This lecture/discussion/demonstration by Dr. Dick Dennis of the University of Illinois will establish the background for the action items to be produced by the Working Groups (see attached descriptions) during the remainder of the Conference.
10:30 - 11:00	More coffee, trips to the necessary room and general respite
11:00 - 11:45	Establishment of Working Groups Each participant will be assigned to what hopefully is an appropriate Work Group. Bob Kansky will clarify the tasks to be done; the groups will meet briefly.
11:45 - 1:00	Lunch, polite conversation and possible collapse
1:00 - 4:30	Work on Action Items The afternoon session will be broken into four segments. The length of each segment will be determined on site. Those segments, in order, will be devoted to the following tasks.
	I. Work Groups meet to make first draft of action items.
	II. Work Groups read draft items to the entire group to permit brief reactions from total group.
	III. Work Groups meet to rewrite draft items. Stencils, a duplicator and paper will be provided so that copies can be produced for Segment IV.
	IV. Total group discusses and votes on action items produced by Work Groups.
4:30 - 7:00	Rest and recuperation.
7:00 - ????	Computer Demonstrations at the I-25 Inn Several microcomputers will be set up at the I-25 Inn. Everyone is welcome to drop in and get a little hands-on experience in running some of the programs. (Room numbers will be announced.)

*The conference will be held in Room 240. Please check in at the Principal's Office; a guide will take you to the room.

APPENDIX E
COMPUTER APPLICATIONS WORK GROUPS

It will be the task of each of the following work groups to produce specific action items directed to the institution, agency or yet-to-be-formed task force which is indicated. The work groups will work part of the morning and all of the afternoon. The entire group of Conference participants will have the opportunity to endorse/modify/reject these action items. A tentative list of work groups (and a broad description of the task of each) is given below.

Work Group 1: Position Statement

Using a draft position statement on educational applications of computers (the product of other teacher groups in Wyoming), prepare a position statement to be presented to the State Department of Education and all professional organizations in Wyoming. (Should a copy be sent to the national offices of these organizations (e.g., NCTM, IRA, NSTA, NASSP, etc.)?)

Work Group 2: Software Information Exchange

Prepare guidelines for exchange of software (programs) among current computer users. Design a sample documentation form (a draft of which will be presented to aid discussion). Consider solving the compatibility problem by utilizing a single language (BASIC?) and format (hard copy?) for exchange. Identify a group or groups who should take responsibility for operating and refining this exchange.

Work Group 3: General Communication

Recommend who (what agency or group) should take responsibility for preparing/distributing a newsletter to interested parties. Outline, in general, its purpose and content. Suggest the source(s) of financial support and the frequency of publication.

Work Group 4: Suggestions to Wyoming NCTM/NSTA Affiliate Groups

Recommendations to WMSTA, SEWCOME and BHMC regarding sectionals and workshops at meetings, expressing positions on preservice and inservice education to the University and State Department, establishing a committee on computer applications, communicating with other professional groups in the state (reading, social studies, vocational/career education, business, physical education, administrators, school boards, etc.), suggesting certification standards, etc.

Work Group 5: Suggestions to Wyoming State Department of Education

Recommend "first steps" to the State Department of Education with regard to acquainting administrators with the instructional role of the computer and attendant concerns in the selection of hardware, establishing the basis for a possible new certification standard, identification of (and gathering together) in multilevel/multidisciplinary computer applications advisory committee, establishing a borrow-a-computer program, recommend establishment of a "model" school, etc.

Work Group 6: Suggestions to the SMTC/Higher Education

Suggest priorities regarding awareness programs for all educators, inservice programs for potential users, research studies (needs assessment) to document federal funding proposals, establishment of a computer materials resource center (books, journals, software), the production of software "service programs," etc.

Work Group 7: Suggestions to National Professional Groups

Suggest specific actions that such groups might take to aid both the novice and the experienced user through special sections in their journals, the preparation of yearbooks or monographs, communication with commercial publishers, sections and workshops at meetings, communication among professional groups, establishing committees to monitor developments (and, perhaps, prepare exemplary materials), etc.

Work Group 8: Broadening the "Usership" Base

(a) Subgroup 8A: Elementary School Teachers

Specify what actions might be taken by whom (agencies, groups, institutions) to attend to the special concerns of elementary school teachers. Consider preservice education, inservice education (including lack of awareness or potential resistance), development of those applications which would reduce the present burden of elementary teachers, emphasis on applications requiring no knowledge of computer programming, provision of consultants to aid in the selection/creation/modification of materials and introduction of new programs/services, etc.

(b) Subgroup 8B: Secondary School Teachers

Specify what actions might be taken by whom (agencies, groups, institutions) to attend to the concerns of secondary school teachers in subject matter areas not generally viewed as being "computer oriented". Consider preservice education, inservice education (including lack of awareness or potential resistance), development of those applications which would reduce the present burden of secondary teachers, emphasis on applications requiring no knowledge of computer programming, provision of consultants to aid in the selection/creation/modification of materials and introduction of new programs/services, etc.

Work Group 9: A Computer-Use Survey of Wyoming Schools

The group will be provided with the draft of a four-section instrument designed to gather data about

(a) the current status of computer usage in Wyoming schools and

(b) opinions regarding the potential instructional use of the computer.

Should the survey be run? Is the instrument clear and complete? (If not, suggest changes.) What schools should be surveyed (all secondary, all secondary and some elementary,...)? What should be done with the results? Should the SMTC conduct the study?

The group also will be supplied with a draft of a cover letter from the SDE to the administrators asked to participate in the survey. Are changes needed in the letter? Should the SDE be asked to endorse the survey by signing such a letter? Who should sign the letter?

APPENDIX F

RESOLUTIONS GENERATED BY CONFERENCE WORK GROUPS

Be It Resolved:

Resolution 1) That the following position statement regarding instructional applications of computers be adopted by this Conference and directed to the State Department of Education, the University of Wyoming and all educational professional organizations in Wyoming:

As a result of the widespread use of computers by government and business, virtually every citizen is now a recipient of computing services. Universal education about computers is necessary both to resolve issues arising from uses in which a person is affected by computers and to ensure each person's awareness of the benefits of computer usage in his personal and professional lives.

Computer literacy is an essential outcome of contemporary education. Each student should acquire an understanding of the versatility and limitations of the computer through firsthand experiences with applications in a variety of subject matter fields.

The effect of computers on the total school program (K-12) is an essential concern of the entire educational community. The teaching of computer programming to students must be placed in proper perspective as only one instructional use of computers. Teachers should be prepared to take maximum advantage of the many kinds of applications of computers to education. For example, the scope of the program should be broad enough to include the following:

* Simulations which give the opportunity to practice decision making (e.g., in social sciences, business)
* Drill and practice programs (e.g., in foreign languages)
* Word processing to develop writing skills
* Problem solving (e.g., in mathematics)
* Simulations which replace dangerous, expensive or technically difficult laboratory work (e.g., in the natural sciences)
* Tutorial lessons (e.g., for handicapped or gifted children)
* Career information services
* Data processing for the purpose of improving classroom instruction
* Student-operated, non-commercial computer services for the community
* Computer assisted testing designed to improve the evaluation process

Resolution 1 - (Concluded)

* Computer instruction aimed at optimizing student progress
* Resource files (e.g. for lab supplies or instructional materials)

The computer can be a valuable tool in all disciplines at each grade level. Comprehensive planning for the use of computers is a responsibility of teachers, administrators, parents and support personnel. Each has a vital role to play in the definition of computer uses, the evaluation of software and the selection of equipment which will meet the uses specified.

= = = =

Resolution 3) That a newsletter regarding instructional uses of computers in Wyoming be published and disseminated by the Wyoming State Department of Education and that such newsletter to be introduced through the Wyoming Educator, in an article explaining its purpose and existence,

That this newsletter be published three times a year (preferably during the months of October, January and April),

That a feature article in the January issue of Wyoming Educator cover the recommendations of the Wyoming Conference on Educational Applications of Computers held on 28 September 1979,

That the April, 1980 issue of the newsletter contain information concerning the courses available in computer sciences at the higher educational levels, and

That priorities for future publications should involve exchanges of information about statewide computer usage and about the availability and exchange of software materials.

= (Resolution 3 is from Work Group #3)

Resolution 4) That the Big Horn Basin Mathematics Council, the Southeast Wyoming Council of Mathematics Educators, and the Wyoming Mathematics and Science Teachers Association be unified with respect to the use of computers in education,

That all three organizations support the State Superintendent of Public Instruction in her efforts to encourage attendance at the two-day, multidisciplinary inservice convention to be held in the Fall of 1980,

That, at the above-referenced convention, the three organizations

(a) conduct a general session on computer applications at all levels and in all disciplines and

(b) set up an on-site, hands-on booth demonstrating applications in all disciplines,

Resolution 5) That the three organizations have members at the Wyoming School Boards Association and Wyoming Association of School Administrators conventions in 1979 and 1980 to demonstrate instructional uses of computers,

(Resolution 6) That a committee be formed by January of 1980 for the purposes of

(a) specifying certification requirements for mathematics teachers (with the possible inclusion of a computer science course) and

(b) participating in writing groups charged with developing curriculum materials, guidelines or funding proposals.

(Resolution 7) That the organizations contact the Computer Science areas of all community colleges and the University of Wyoming involving the establishment of a contest (similar to the Math Talent Search) involving broad computer applications.

= =(Resolutions 4-7 are from Work Group #4)

(Resolution 8) That the State Department of Education (SDE) support inservice education regarding multiple uses of the computer in education. In order to achieve this goal, regional computer awareness workshops should be implemented and a K-12 demonstration site for applications of computer use, both instructionally and administratively, should be established.

(Resolution 9) That the SDE develop certification standards in conjunction with potentially interested parties such as the various professional organizations and university personnel. Such certification standards would apply when the purpose of instruction focuses on programming techniques and the functions of specific computer languages.

(Resolution 10) That a computer bank be established through the SDE to facilitate exchange of software material.

(Resolution 11) That a list of hardware characteristics be maintained by the SDE and coded as to specific application such as instructional uses, administrative uses, etc.

= =(Resolutions 8-11 are from Work Group #5)

Resolution 12) That the State Department of Education (SDE) assist in funding workshops for school staff and concerned citizens, organized by SMTC working with local leaders in the field, in the general awareness of computers.

Resolution 13) That the Science and Mathematics Teaching Center (SMTC) and the SDE appoint resource personnel to assist individual districts in needs assessments and computer hardware selection.

Resolution 14) That the University of Wyoming provide portal schools, summer courses and correspondence courses for potential users.

Resolution 15) That the SMTC assist an interested school in obtaining funds to set up an experimental computer curriculum, applying the different computer uses.

= (Resolutions 12-15 are from Work Group #6)

Resolution 16) That national professional education organizations in all curriculum areas form a committee to establish a communications network to share ideas and facilitate computer literacy in all subject areas.

Resolution 17) That journals of national professional education organizations should include a section on suggested uses of computers in that curricular area.

Resolution 18) That national professional education organizations should make available monographs and/or other special publications demonstrating the applications of computers in education.

Resolution 19) That time should be available for computer literacy programs at national and regional meetings of professional education organizations.

Resolution 20) That publishers should incorporate input from educators with experience in computer uses in education to develop software and should restructure advertising to increase the visibility of such products and to increase their availability for examination.

Resolution 21) That the National Education Association endorse, through its state affiliates, state-wide interdisciplinary conferences on educational uses of computers.

Resolution 22) That each of Resolutions 16-21 which are approved be sent forward to the appropriate agencies by the State Department of Education.

= (Resolutions 16-22 are from Work Group #7)

(Resolution 23) That the University of Wyoming will provide information and demonstration of computer usage and adaptability in the elementary school starting by the school year 1980-81. This will include awareness, funding sources and various total school uses.

(Resolution 24) That inservice by school visitation and Portal School instructors will be given. The instructor will have knowledge in basic programming and will come with well-defined applications for teacher-use, student-use and administrative-use.

(Resolution 25) That whatever group in the State is knowledgeable and able to document and evaluate instruction and learning be supported in intensive study of voluntary elementary school computer efforts and that these results be widely distributed to other elementary educators of the State.

(Resolution 26) That committees of teachers and administrators should be formed to examine existing programs and various computers for their individual districts.

(Resolution 27) That the computer efforts in the State schools proceed thoughtfully and systematically.

= =(Resolutions 23-27 are from Work Group #8A)

(Resolution 28) That Science and Mathematics Teaching Center (SMTC) provide (inservice) opportunities for teachers, administrators, etc. to become aware of computer services that can be provided at the building or classroom level.

(Resolution 29) That the State Department of Education (SDE), in conjunction with SMTC, attempt to locate both funding and a location for a demonstration center of computer use at the instructional level within three years.

(Resolution 30) That the University of Wyoming and the community colleges be encouraged to provide introductory courses for educators in educational computer programming.

(Resolution 31) That a courseware writing program be established at the University with the products to be distributed through an educational software library.

Resolution 32) That the SDE provide programming consultants to help districts create their own courseware.

Resolution 33) That school districts place a high priority on availability in the classroom of computer hardware.

Resolution 34) That the SDE encourage its subject area coordinators to become aware of computer uses within their respective subject areas.

= (Resolutions 28-34 are from Work Group #8B)

Resolution 35) That a survey be conducted

(a) to determine the current status of computer usage in Wyoming schools and

(b) to obtain opinions from a representative sample of Wyoming educators regarding the potential instructional uses of the computer.

Resolution 36) That the above survey should be conducted by Bob Kansky (Science and Mathematics Teaching Center) with the endorsement of the State Department of Education (SDE)

Resolution 37) That a cover letter for the above survey be signed by Bob Kansky under the title "Director of Computer Education" and endorsed by the SDE.

Resolution 38) That the survey questionnaire be sent to

(a) all school districts,

(b) all secondary schools (copy to principal and to a recommended representative) to be completed by teachers from various disciplines, and

(c) a sample of elementary schools (copy to principal and recommended representatives) to be completed by teachers from each grade level.

Resolution 39) That the results of the survey

(a) be analyzed by the Science and Mathematics Teaching Center,

(b) be distributed by the SDE to all schools in Wyoming, and

(c) be reviewed by, and their implications discussed with, personnel from local school districts with the aid of a team from the SMTC funded by the SDE.

= (Resolutions 35-39 are from Work Group #9)

APPENDIX G

BALLOT

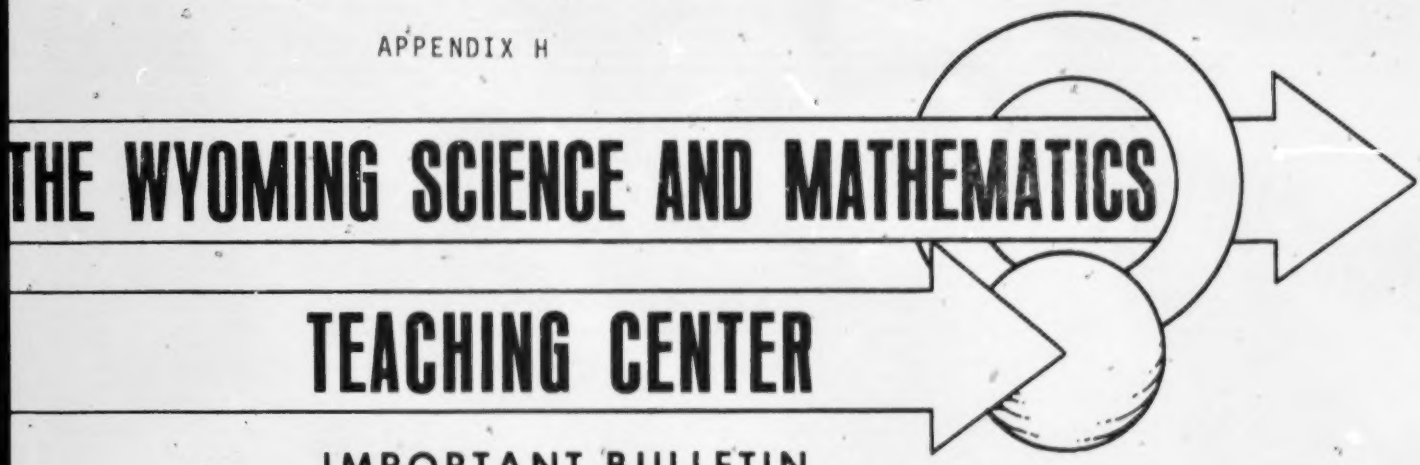
Wyoming Conference on Educational
Applications of Computers

Resolution Number	Vote (Circle One)		Comment (?)
1	Approve	Reject	
2	Approve	Reject	
3	Approve	Reject	
4	Approve	Reject	
5	Approve	Reject	
6	Approve	Reject	
7	Approve	Reject	
8	Approve	Reject	
9	Approve	Reject	
10	Approve	Reject	
11	Approve	Reject	
12	Approve	Reject	
13	Approve	Reject	
14	Approve	Reject	
15	Approve	Reject	
16	Approve	Reject	
17	Approve	Reject	
18	Approve	Reject	
19	Approve	Reject	
20	Approve	Reject	
21	Approve	Reject	
22	Approve	Reject	
23	Approve	Reject	
24	Approve	Reject	
25	Approve	Reject	
26	Approve	Reject	
27	Approve	Reject	
28	Approve	Reject	
29	Approve	Reject	
30	Approve	Reject	
31	Approve	Reject	
32	Approve	Reject	
33	Approve	Reject	
34	Approve	Reject	
35	Approve	Reject	
36	Approve	Reject	
37	Approve	Reject	
38	Approve	Reject	
39	Approve	Reject	

Your Signature* _____

* Please sign in order to validate the ballot. Only public school personnel will cast ballots; University and State Department people will not vote.

APPENDIX H



IMPORTANT BULLETIN

Dear Computer Conference Participant:

Enclosed is a typed copy of the 39 resolutions which the Work Groups produced at our meeting. Please cast your vote on each resolution using the ballot provided. Please sign the ballot so that my count of official votes can't be questioned by the groups to whom the results will be reported.

I have made minor changes in the wording of some resolutions to provide a common format and, in a few cases, to clarify a statement. In three cases, I phoned the person who had chaired the group to make certain that the changes were acceptable. All in all, I believe that I did not do violence to any resolution--at least I hope so, as the resolutions were excellent both singularly and collectively.

Please return your signed ballots using the envelope provided. KEEP THE LIST OF RESOLUTIONS as I'll be referring to the resolutions by number when reporting the voting results to you.

Thank you for your continuing participation. I'll be dropping you a note from time to time to keep you informed of our progress.

Cordially,

Bob

Bob Kansky

BK:baa

P.S.: Please note the article about us in the last Wyoming Educator.

Enclosures: List of Resolutions
List of Participants
Ballot
Envelope

APPENDIX I

VOTING RESULTS ON CONFERENCE RESOLUTIONS

The following is a summary of the voting upon the 39 resolutions proposed at the Wyoming Invitational Conference on Instructional Applications of Computers. Ballots were returned by 51 of the 54 eligible voters.+

The three numbers in the parentheses following a particular resolution number are the number of persons approving, rejecting or not voting on that resolution. This is followed by a note of the percent of persons approving the resolution.

Each voting record is accompanied by all comments submitted by the voters; each '*' indicates a different participant is commenting. While no resolution has been altered in response to these comments, any distribution of the resolutions will be accompanied by the comments.

Resolution 1: (49, 0, 2) -- 96 percent
* I am concerned about student-operated computer services.
* In Paragraph 1, include community colleges.

Resolution 2: (48, 3, 0) -- 94 percent
* I think that the State Department should have a card file of all information available at the SMTC.
* Funding?
* You might indicate that this will be kept current.
* Could add suggested use in counseling.
* I do not feel all students need "computer literacy".
* If SMTC has facilities, personnel and funding.
* At University Department of Education.
* Should be University or State Department of Education -- not science and math.

Resolution 3: (51, 0, 0) -- 100 percent
* Priority #3.

+ University and State Department of Education personnel did not receive ballots.

Resolution 4: (51, 0, 0) -- 100 percent
* Involve other organizations.
  Involve other disciplines.

Resolution 5: (50, 1, 0) -- 98 percent
* Impossible for 1979.
* Involve other disciplines. (This comment appeared twice.)

Resolution 6: (43, 8, 0) -- 84 percent
* Please be very careful about certification standards.
* I do not feel that certification should be limited to math teachers.
* This seems off the topic for this conference.
* Part (b) doesn't make sense. (a) ?
* Not specific enough.
  Why just math teacher certification requirements?
* Certification in several areas.

Resolution 7: (48, 2, 1) -- 94 percent
* Too early in development.
* I am not sure what this will do.
* Some reservations about this at this time.

Resolution 8: (49, 2, 0) -- 96 percent
* Very important!!
* Can Resolutions 8, 15 and 29 be combined here?
* Of Resolutions 8, 15 and 29, this is the best.
* Inservice is okay; site established, no.

Resolution 9: (46, 4, 1) -- 90 percent
* What be the role of the committee in Resolution 6 in developing certification standards?
* Too early for this.
* At this time I do not see how we could establish certification standards when, in fact, the University of Wyoming offers no curriculum appropriate to meeting the classroom teacher of programming. Courses offered in the summer at the University of Wyoming or by extension which meet the needs of "potential users" (see Resolution 14) are fine but also offerings that really provide meat for the programming teacher are needed especially if we intend imposing "standards."

Resolution 10: (46, 4, 1) -- 90 percent
* State Department of Education people will never get it done -- University people will.
* Is it necessary to have two different sites?
* Approve if it is at the SMTC.
* SMTC, not State Department of Education.
* I prefer SMTC.
  Duplicates Resolution 2.
* If not a duplication of Resolution 2.

Resolution 11: (45, 5, 1) -- 88 percent
* Can't this be combined with Resolution 26?
* Approve if it is at the SMTC.
* SMTC, not State Department of Education.
* Better to do either at SMTC or SDE, not both.
* If not duplication.

Resolution 12: (48, 3, 0) -- 94 percent
* A poorly phrased, unclear resolution.
* Replaces Resolution 8.
* Involve a wider group of people.
* Would have broader background if personnel from other areas help with organization.

Resolution 13: (50, 1, 0) -- 98 percent
* Should district help pay?
* Needed.
* Concept is good. It assumes the existence of "resource personnel" qualified to do this job. I'm not convinced such a core exists.
* Does the State Department of Education have competency in this area?
* If for all areas.
* If for the math/science areas.

Resolution 14: (50, 1, 0) -- 98 percent
* You can't learn programming by correspondence.

Resolution 15: (47, 4, 0) -- 92 percent
* Where possible.
* Info stated in Resolutions 8 and 29.
* Combine with Resolution 8.
* Redundant.
* Funding is best done by local districts.

Resolution 16: (50, 1, 0) -- 98 percent
* Unworkable.
* Stress all curriculum areas.
* If state and national organizations.
* Should be "state" instead of "national" or state chapter of a national organization.

Resolution 17: (51, 0, 0) -- 100 percent

Resolution 18: (50, 1, 0) -- 98 percent
* Do Resolution 17 instead.

Resolution 19: (51, 0, 0) -- 100 percent

Resolution 20: (51, 0, 0) -- 100 percent
* Doubt if much will happen here.

Resolution 21: (51, 0, 0) -- 100 percent

Resolution 22: (50, 1, 0) -- 98 percent

Resolution 23: (49, 2, 0) -- 96 percent
* All of these efforts should be coordinated.
* Glad to see elementary involvement.
* At least temporarily, let's leave elementary alone. Due to high cost of equipment and extreme demands placed on the time of elementary schools I am, at least temporarily, opposed to expanding their curriculum to include computer literacy. The socialization of a young child is not handled by a computer but by a person.
* Date may be a problem.

Resolution 24: (51, 0, 0) -- 100 percent
* Will the participants receive credit?

Resolution 25: (47, 3, 1) -- 92 percent
* Unclear.
* Could the group be identified?
* Audience too vague.
* Supported how?

Resolution 26: (43, 6, 2) -- 84 percent
* Only if they want to.
* I see no reason for such a resolution. Let each district do as it pleases.
Would the committee determine needs?
* Unnecessary.
* Insert "for possible use" after the word "computer."
Replace the word "formed" by "available."

Resolution 27: (48, 2, 1) -- 94 percent
* Sure.
* !!
* Who will see that this is taking place?
* Too general to be meaningful.
Determined by whom?
* Definitely.
* The intent is not rejected. The rest of the document does it.

Resolution 28: (51, 0, 0) -- 100 percent
* Could 23, 24 and 28 be combined?
* Plus other disciplines. (This comment appeared twice.)

Resolution 29: (48, 3, 0) -- 94 percent
* Redundant.
* Disapprove concept of model center.

Resolution 30: (49, 2, 0) -- 96 percent
* The goals should be different than those for non-educators.
* Replace "programming" by "usage".
* Programming is programming and is not being offered.

Resolution 31: (50, 1, 0) -- 98 percent
* I've not seen any qualified person to do this at the University of Wyoming.

Resolution 32: (50, 0, 1) -- 98 percent
* But I still don't put much faith in the State Department of Education.
* Insert "or SMTC" after "SDE".
* If through SMTC.
* Maybe a list of teachers who have had programming.
* At whose cost? Perhaps provide a list of consultants and their fees.

Resolution 33: (49, 2, 0) -- 96 percent
* You can't dictate priority to local districts.
* Limit to 'secondary' classroom for 5 years.
* We need software not hardware in each classroom.

Resolution 34: (51, 0, 0) -- 100 percent
* Definitely!!

Resolution 35: (51, 0, 0) -- 100 percent
* Definitely.
* This should be done right away.
* Isn't this the same as Resolution 2(c)?
* Very soon.
* Priority #1.

Resolution 36: (51, 0, 0) -- 100 percent
* You've got to get paid for something.
* Very soon.
* Priority #1.
* If Bob wants to do it.

Resolution 37: (50, 0, 1) -- 98 percent
* Is this appropriate? Who grants that title?
* Very soon.
* Priority #1.
* If Bob wants to do it.

Resolution 38: (47, 4, 0) -- 92 percent
* Why only a sample? If it is important, it is important enough to send to everyone.
* In 38(b), replace "a recommended representative" by "recommended representatives."

Resolution 39: (50, 1, 0) -- 98 percent
* In 39(a), replace "analyzed" by "compiled" or tell what type of analyzing.
* Very soon.
* Priority #1.

APPENDIX J

DATE: _____

PROGRAM DOCUMENTATION SHEET

Program name: _____

Author's name: _____

Address: _____

Phone number: _____

Language: BASIC _____

Other (specify) _____

Is hard copy available? _____

Copying cost? _____

General purpose of program:

Instructional _____

Administrative _____

Program memory size: _____ Bytes

Estimated running time for this program:

(in minutes) _____

Intended audience:

Teachers _____

Students _____

Other (specify) _____

Is a printer required? _____

Status: Developmental _____

Operational _____

Other (specify) _____

Subject area: _____

System hardware/firmware description:

Style: Tutorial _____

Drill & Practice _____

Testing _____

Instructional Management _____

Game _____

Problem Solving _____

Simulation _____

Other (specify) _____

Computer name (Apple, Pet, etc.): _____

_____

*Printer name: _____

*Terminal name: _____

*Disk drive name: _____

Languages available: _____

_____

_____

*If these come with the computer as part of a "unit", please write UNIT here. If purchased separately, please indicate the brand name. If not part of your system, write NONE.

General description of the program:

General description of intended user (including note of prerequisite knowledge assumed):

Instructions for using the program:

Required ancillary materials (books, worksheets, etc.):

Special features (e.g., use of files, chaining, large temporary storage requirements, indexed files, etc.):

APPENDIX K

COMPUTER USAGE SURVEY INSTRUMENTS

General Instructions

The purpose of this survey is twofold: (1) to determine the nature and extent of computer usage in Wyoming's schools and (2) to obtain the opinion of Wyoming educators regarding the potential uses of computers in the schools. To ensure that decision-makers have the best possible data from which to draw conclusions, your response is urgently needed WHETHER OR NOT YOUR SCHOOL USES COMPUTERS.

This survey is divided into four sections:

Section A: General information about your school
Section B: Opinions regarding instructional uses of the computer in the school
Section C: Current uses of computers by your school
Section D: Computer hardware being used by your school

Please follow the following guidelines in completing this questionnaire.

I. If your school does NOT use a computer (see definitions below), complete sections A and B only.
II. If your school uses a computer for administrative or instructional purposes, complete all four sections (A-D).

Although this survey has been sent to you as the school's administrator, you may wish to complete it by assigning each section to the staff member most knowledgeable/interested in the area addressed. One person could then coordinate the completion of the questionnaire and be responsible for its return.

Definitions

In order that all respondents may have the same frame of reference in answering the questionnaire, "computer usage" is defined for the purpose of this survey.

What is a Computer?

For this study, a computer is defined as a machine that operates under the control of a stored program. The term "computer" includes the central processing unit, auxiliary storage, communication links, and all peripheral equipment.

The programmable desk top calculator is to be included, but only when it is operated with a stored program. Electronic accounting machines are specifically excluded from this definition.

Access to the Computer

To be included in this study, the computer may be accessed in any or all of the following ways:

- computer physically present in the school
- terminal in school, connecting with computer at any location (e.g., a network of schools on a time-shared system)
- computer facilities located near the school
- computer services provided by the school system (e.g., scheduling, payroll, etc.)
- computer services provided by an agency other than the school system (e.g., a bank, oil company, etc.)

For further information, please contact: Bob Kansky
Box 3992, University Station
Laramie, WY 82071
Phone: 766-6381

SECTION A: GENERAL INFORMATION

A.1 School name: _____

A.2 School telephone number: _____

A.3 County in which school is located: _____

A.4 Name of the person in your school who should be contacted regarding this questionnaire:

_____

A.5 What grade levels are included in your school: _____ through _____

A.6 Number of full-time teachers in your school: _____

A.7 Current enrollment in your school

_____ Under 50 _____ 400-599

_____ 50-100 _____ 600-999

_____ 100-199 _____ 1000-1499

_____ 200-399 _____ 1500+ (specify number here:) _____

A.8 Does your school currently have access to a computer for either administrative or instructional purposes?

_____ yes _____ no

A.9 Is your school now planning to obtain access to a computer for administrative purposes?

_____ yes _____ no

A.10 Is your school now planning to obtain access to a computer for instructional purposes?

_____ yes _____ no

SECTION B: OPINIONS ABOUT INSTRUCTIONAL USE

NOTE: In completing this section, you may wish to record the collective opinion of all (or some group) of the faculty in your school.

B.1 The opinions recorded below are those of

_____ one person
_____ the entire school faculty
_____ a subgroup of faculty (indicate number here:) _____

B.2 Indicate your level of agreement with <u>each</u> of the following possible educational uses of computers in the school by circling the appropriate number. The opinion should be with respect to instructional uses of computers in general (and not just in your particular school).

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree		
5	4	3	2	1	(a)	To teach <u>every</u> student about computers and their role in society.
5	4	3	2	1	(b)	To teach <u>every</u> student to program a computer.
5	4	3	2	1	(c)	To provide computer experiences (including programming) for all college-bound students (but to college-bound students only).
5	4	3	2	1	(d)	To teach programming to only those college-bound students who plan to enter programs in mathematics or the natural sciences.
5	4	3	2	1	(e)	To allow any teacher who so wishes to utilize the computer as an instructional tool in teaching courses in his area.
5	4	3	2	1	(f)	To permit any teacher to learn to program a computer.
5	4	3	2	1	(g)	To provide instructional services (e.g., test grading, test analysis, record keeping, inventory management, reference testing, form-letter generation, etc.) to any teacher requesting such services.
5	4	3	2	1	(h)	As a special learning resource for handicapped students.
5	4	3	2	1	(i)	As a special learning resource for gifted students (regardless of subject area of that giftedness)
5	4	3	2	1	(j)	To permit each student to have experiences with computer applications (not necessarily programming) in his area of subject matter interest.
5	4	3	2	1	(k)	To provide computer programming as a vocational/technical training skill for students who are not college bound.

B.3 Indicate your opinion regarding the training of teachers with respect to computers and their uses.

Strongly Agree
Agree
No opinion
Disagree
Strongly Disagree

5 4 3 2 1 (a) Inservice opportunities should be provided for all teachers to learn about computers and their uses, but no programming should be included in that inservice.

5 4 3 2 1 (b) Inservice opportunities which include an introduction to programming should be provided for all teachers.

5 4 3 2 1 (c) Work with computers should be included in the preservice college education of all elementary school teachers.

5 4 3 2 1 (d) Work with computers should be included in the preservice college training of all secondary school teachers.

5 4 3 2 1 (e) Work with computers should be included in the preservice college training of all mathematics and science teachers.

5 4 3 2 1 (f) There is a need for secondary school teachers who are qualified to teach computer science (i.e., computer literacy, computer programming, data processing, etc.).

5 4 3 2 1 (g) The Wyoming State Department of Education should establish certification requirements in the area of computer science.

5 4 3 2 1 (h) A vocational classroom funding unit for computer science be authorized at the secondary level.

If your school now uses a computer, please go on to SECTION C

SECTION C: CURRENT USES IN YOUR SCHOOL

C.1 If the computer is used for administrative applications, check each of the following which describes an administrative usage) by your school.

_____ Student accounting (such as student scheduling, student records, attendance records, report cards, etc.).

_____ Research and evaluation of teaching methods, curriculum materials, etc.

_____ Resource management and planning (such as maintaining personnel and financial records, projection of enrollments, transportation scheduling, etc.).

_____ Standardized test grading/reporting.

_____ Other administrative uses (please specify below)

_____

_____

C.2 If the computer is used for instructional applications, check each of the following which describes an instructional use of computers in your school.

_____ Tutorial (The student learns concepts through active involvement in a dialogue with the computer regarding content in some subject matter area.)

_____ Problem solving (The computer is used as a computational aid for solving complex problems in science, mathematics, business, social studies, etc.)

_____ Teaching computer programming (or data processing).

_____ Simulation (The instructional programs represent some real-life task such as decision-making in the social sciences, genetics experiments in biology, pest control, crop management, etc.)

_____ Career selection (The programs provide counseling in career selection and preparation.)

_____ Instructional games (The games have specific educational goals to develop, extend or reinforce specific skills.)

_____ Drill and practice (The programs provide practice in using skills or concepts taught in the classroom.)

_____ Test construction (The computer constructs tailored tests from a stored file of objective—referenced items.)

_____ Instructional management (The computer provides students with individualized assignments and provides the teacher with a record of each student's progress on individualized contracts.)

_____ Word processing (The computer is used to improve writing skills by permitting the "massaging" of draft forms.)

_____ Teacher-aide services such as keeping inventories of resources, storing annotated bibliographies, generating individualized form letters to parents, etc.

SECTION D: HARDWARE

D.1 Check each of the following ways in which computer facilities have been made available to your school.

_____ Ownership by the school district.

_____ Lease with an option to buy.

_____ A rental agreement.

_____ Mailing or phoning of data to a computer service.

_____ Other (please specify below)

_____

_____

D.2 What computer(s) do you use?

Manufacturer	Model	How Many?
_____	_____	_____
_____	_____	_____
_____	_____	_____

D.3 What computer languages are available to you?

_____ BASIC

_____ FORTRAN

_____ COBOL

_____ PASCAL

_____ APL

_____ OTHER (please specify) _____

_____

_____

_____

D.4 How many terminals are available to you? _____

SCIENCE AND MATHEMATICS
TEACHING CENTER

ADDRESS REPLY TO WRITER

THE UNIVERSITY OF WYOMING
UNIVERSITY STATION, BOX 3992
LARAMIE, WYOMING 82071

D R A F T
Cover Letter
Computing Survey

Dear (name of school principal):

On 28 September 1979, sixty teachers from across Wyoming (representing all grade levels and several subject matter areas) met to recommend actions regarding the educational applications of computers in the public schools of Wyoming. In order for the State Department of Education and the University of Wyoming to respond to those recommendations, data is needed relative to (a) the present status of computer usage in Wyoming schools and (b) the opinion of educators with regard to the potential educational value of computers.

In cooperation with the State Department of Education, we have prepared the enclosed questionnaire which was designed to provide the required data. We are requesting that you complete that questionnaire and return it in the enclosed envelope by (date) .

Should you have any questions regarding the questionnaire, please write or call (collect and person-to-person):

Bob Kansky
University Station Box 3992
Laramie, WY 82071

Phone: 766-6381

Thank you for helping us to serve better the schools of Wyoming.

Sincerely,

Bob Kansky, Director
Educational Applications
of Computers

Sincerely,

?????????
State Department of
Education